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Proceedings of the United States National Museum

SMITHSONIAN INSTITUTION • WASHINGTON, D.C.

Volume 123 1967 Number 3611

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SMITHSONIAN PRESS

Proceedings of
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Butterflies of the New Genus *Calystryma* (Lycaenidae: Theclinae, Strymonini)

By William D. Field
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Calystryma, new genus, contains 13 species, all of which are neotropical in distribution. Six of the included species are herein described as new and the rest are transferred to *Calystryma* from *Thecla* Fabricius, where they have resided ever since they were first described in spite of the fact that they belong to the Strymonini (forewing having 3 radial veins) not to the Theclini (forewing having 2 radial veins). I designate as type of the genus: *Calystryma blora*, new species. The name *Calystryma* is an arbitrary, euphonous combination of letters and I consider it to be of the feminine gender.

Calystryma is closely related to *Calycopis* Scudder, differing chiefly in the form of the male and female genitalia.

In the male genitalia the uncus is divided dorsally into two lateral elements that in lateral view are produced greatly near the middle, thus differing from *Calycopis*. Vesica of aedeagus with a single spine-like cornutus located at or near distal end of aedeagal shaft. Aedeagus lacking the ventral keel found in some Strymonini and nearly straight or sometimes upturned distally, with this end usually blunt, not sharply pointed as in *Calycopis*. Harpes differing from those of *Calycopis* in being separate along ventral margin, fused only at base or in one case (*C. keta*) fused for nearly one-half their lengths from base. This last species, however, has the *Calystryma* type of uncus

and eighth tergite. Gnathos divided into two separate armlike parts, each with an elbow bend near or before middle and with apical part (forearm) often with carina along inner surface; carina either laminate or dentate.

Eighth tergite of male abdomen subcordate in shape with a broad and deeply incised posterior concavity, usually much more deeply incised than in *Calycopis*.

Female genitalia with ductus bursae a simple sclerotized tube, envelope shaped at ostium bursae with a superior genital plate above and a ventral genital plate below the ostium and usually with the free edge of the superior genital plate divided into two lateral elements bearing teeth or spurlike processes. In one species (*C. atrox*) this free edge is a long continuous ridge. Bursa copulatrix with two large platelike signa, each ornamented with a centrally placed spine that is rose-thorn in shape and with anterior margin deeply dentate. Signa thus similar to those of *Calycopis*.

In habitus *Calystryma* is similar to *Calycopis*, especially in that the forewings of the males lack the scent pads frequently found in the Theclinae and in having some shade of red in the area between the large blue lunule in interspace Cu_2 and the postmedian tripartite line on the undersurface of the hindwing. In *Calystryma* the red inner lining along the postmedian tripartite line on undersurface of the hindwing is reduced greatly or lacking with the $Sc+R_1$ element of this line very distinctly outlined with black, forming a black and white bar that stands out sharply from the rest of this line. Except in four species (*C. atrox*, *C. malta*, *C. anapa*, and *C. gentilla*) there are two submarginal ecellate spots below vein M_3 on this same surface. The uppersurfaces of all but one species (*C. trebula*) are either entirely dark brown or very dark brown covered with dull metallic purple. The males of *C. trebula* have the hindwing dark iridescent or shining blue and thus resemble most of the species of *Calycopis* in this respect.

The author wishes to acknowledge with thanks the cooperation and aid of A. G. Gabriel, T. G. Howarth, N. H. Bennett, and D. S. Fletcher, all of the Department of Entomology, British Museum (Natural History), London, and Frederick H. Rindge, Department of Entomology, American Museum of Natural History, New York. The late William P. Comstock of the last named museum also greatly helped the author.

The figures of the male and female genitalia and of the eighth tergites of the males were drawn under the author's supervision by Andre D. Pizzini, staff artist. All photographs were made by Jack Scott, staff photographer, except figures 1 through 4 on plate 3, which were furnished by the courtesy of D. S. Fletcher on the staff of the British Museum (Natural History).

Key to the Species of *Calystryma*

MALES (except *C. cinniana*)

1. Uppersurfaces of hindwings bright blue . . . . . 11. **C. trebula**
Uppersurfaces of hindwings not as above 2
2. (1) Harpes separate along ventral margin, fused only at base; posterior lobes of 8th tergite blunt or rounded (figs. 2–12) 3
Harpes fused along ventral margin for nearly one-half their length from base; posterior lobes of 8th tergite acute (fig. 1) . . . 1. **C. keta**
3. (2) Harpe with apex bifurcate; uncus deeply bilobed dorsally (fig. 12). . . . . 12. **C. tifla**
Harpe with apex blunt or gradually acuminate, not bifurcate; uncus only shallowly bilobed dorsally (figs. 2–11) 4
4. (3) Harpe short and blunt and in lateral view slightly concave distally (figs. 6, 7) 5
Harpe longer and gradually more narrow toward distal end (figs. 2–5, 8–10) 6
5. (4) Ground color of wings above brown . . . . . 6. **C. malta**
Ground color of wings above dull metallic purple, slightly dull green at base . . . . . 7. **C. anapa**
6. (4) 8th tergite deeply incised in middle of posterior margin and greatly elongated anteriorly (figs. 8–10) 7
8th tergite more shallowly incised in middle of posterior margin and not distinctly elongated anteriorly (figs. 2–5) 9
7. (6) Ground color of uppersurfaces of wings brown . . . . . 10. **C. barza**
Ground color of uppersurfaces of wings dull metallic purple 8
8. (7) Hindwing underneath with a single submarginal pupillated red lunule, this in interspace Cu_1 and small with a large pupil (nearly ½ the size of entire lunule) . . . . . 8. **C. gentilla**
Hindwing underneath with two submarginal pupillated red lunules, one in interspace Cu_1 and the second in interspace M_3, both lunules with small pupils (not nearly ½ size of lunules) . . . . 9. **C. pisis**
9. (6) Posterior projection of uncus broadly rounded (fig. 5); ground color of wings above dull metallic purple with greenish reflections in base. . . . . 5. **C. meleager**
Posterior projection of uncus narrow and toothlike or beaklike (figs. 2–4); ground color of wings above brown 10
10. (9) Ground color of wings underneath distinctly brown; with a single submarginal pupillated red lunule in interspace Cu_1 . . . 2. **C. atrox**
Ground color of wings underneath light gray or pale brownish gray; with two submarginal pupillated red lunules, one in interspace Cu_1 and one in interspace M_3 11
11. (10) Ground color of wings underneath pale brownish gray with a large and distinct red streak adjacent to inner side of postmedian line in interspace Cu_1 . . . . . 4. **C. naka**
Ground color of wings underneath light gray without the triangular red streak, at most with a small red lunule in this area . . 3. **C. blora**

FEMALES (except *C. blora* and *C. barza*)

1. Superior genital plate with free edge a long continuous ridge (fig. 13). . . . . 2. **C. atrox**
Superior genital plate with free edge divided into two lateral elements (figs. 14–23) 2

2. (1) Superior genital plate with each element broadly rounded and bluntly toothed if toothed at all (figs. 20, 21, 23) 3
Superior genital plate with each element having strong spurlike processes (figs. 14–19, 22) 5
3. (2) Superior genital plate with each element broadly rounded (fig. 23). . . . . 9. **C. pisis**
Superior genital plate with each element rounded and bluntly toothed anteriorly (figs. 20, 21) 4
4. (3) Superior genital plate greatly projected mesially on posterior edge (fig. 20) . . . . . 12. **C. tifla**
Superior genital plate indented mesially on posterior edge (fig. 21). . . . . 5. **C. meleager**
5. (2) Posterior spurlike processes on superior genital plate directed inward toward one another; anterior spurlike process greatly reduced and directed distad (fig. 22) . . . . . 4. **C. naka**
Posterior and interior spurlike processes on superior genital plate distally directed; anterior spurlike processes not as greatly reduced (figs. 14–19) 6
6. (5) Anterior spurlike processes on superior genital plate widely separated and much larger than posterior spurlike processes (fig. 14) . . 1. **C. keta**
Anterior and posterior spurlike processes on superior genital plate not widely separated; if so, then anterior spurlike processes not larger than posterior spurlike processes (figs. 15–19) 7
7. (6) Posterior spurlike processes greatly reduced or rounded and lobelike (figs. 16, 19) 10
Posterior spurlike processes large, sharply pointed and extended (figs. 15, 17, 18) 8
8. (7) Anterior spurlike processes on superior genital plate sickle shaped and widely separated from posterior spurlike processes (fig. 17). . . . . 8. **C. gentilla**
Anterior spurlike processes on superior genital plate nearly straight, not sickle shaped and not widely separated from posterior spurlike processes (figs. 15, 18) 9
9. (8) Posterior margin of superior genital plate between posterior spurlike processes nearly straight (fig. 18) . . . . . 11. **C. trebula**
Posterior margin of superior genital plate between posterior spurlike processes with broad shallow lobes and concave in middle (fig. 15). . . . . 7. **C. anapa**
10. (7) Posterior spurlike processes on superior genital plate rounded and lobelike (fig. 16) . . . . . 6. **C. malta**
Posterior spurlike processes on superior genital plate reduced and bluntly acute, not lobelike (fig. 19) . . . . . 13. **C. cinniana**

Check List of Species

1. *Calystryma keta*, new species
2. *C. atrox* (Butler), 1877, new combination
3. *C. blora*, new species
4. *C. naka*, new species
5. *C. meleager* (Druce), 1907, new combination
6. *C. malta* (Schaus), 1902, new combination
7. *C. anapa*, new species
8. *C. gentilla* (Schaus), 1902, new combination
9. *C. pisis* (Godman and Salvin), 1887, new combination
10. *C. barza*, new species
11. *C. trebula* (Hewitson), 1868, new combination
12. *C. tifla*, new species
13. *C. cinniana* (Hewitson), 1877, new combination

1. *Calystryma keta*, new species

FIGURES 1, 14; PLATES 1 (FIGS. 1, 2), 2 (FIG. 1)

MALE (pl. 1: figs. 1, 2).—Wings above dark brown. Hindwing with a broken white submarginal line below vein M_3 continued to 2d A, with a small orange-red spot on anal lobe and with a tiny triangular white spot at indentation above this lobe. Middle scales of fringe below vein Cu_2 white; tails Cu_1 and Cu_2 tipped with white and with a few long white scales in fringe at end of vein 2d A. Wings underneath with ground color pale gray. Lines at end of cell on both forewing and hindwing indistinct. Postmedian line on forewing pale, the outer portion dirty white in color. This line on hindwing more distinct with the white particularly distinct in the W-mark, in the anal area, and near costa. This line tripartite on this wing with the addition of orange red along its inner surface below vein M_3 and especially in interspace Cu_1. Above vein M_3 this color is very faint if present at all. Hindwing with an orange-red postmedian lunule in interspace Cu_2, with an orange-red bar above the white arch outlining the black anal lobe and with two marginal ocular markings of this color in interspaces M_3 and Cu_1. The ocular marking in interspace Cu_1 is much the larger of the two, extending to or almost to the postmedian tripartite line.

Length of forewing 11.5–12.5 mm.

Male genitalia as illustrated by figures 1B-E with harpes fused for nearly one-half their length from base; with aedeagus distally curved upward; with gnathal arm blunt and having a mesially placed carina; lateral lobe of uncus very uniquely shaped, having a strong acute projection from near lower angle and with a strong projection from lower margin. Eighth tergite (fig. 1A) deeply incised in middle of posterior margin, elongated anteriorly, and with posterior lobes acute and toothed along inner sides.

FEMALE (pl. 2: fig. 1).—Forewing above dark brown with streaks of shining blue in base of wing below and above vein 2d A. Hindwing mostly bright shining blue except for a dark brown border extending around outer margin from the anal angle to costa and except for a dark brown ray extending through bottom of cell to outer margin just above vein M_3 (in one specimen) and with more of this color below vein Cu_1 in anal area (in both specimens). With a white marginal line above 2d A continued to vein M_1. Anal lobe with a small orange-red spot. Wings underneath like those of the male except the black centers of the marginal ocular markings in interspaces M_3 and Cu_1 are distinctly smaller.

Length of forewing 11 mm.

Female genitalia as illustrated by figure 14 with ductus bursae and bursa copulatrix relatively long, the longest of any species of *Calystryma*, their combined length being about four times the width of superior genital plate; the latter with free edge divided into two lateral elements, each with a single pair of spurlike processes, the anterior spurlike process being very large and sickle shaped, the posterior spurlike process reduced in size and distally directed.

TYPE-LOCALITY.—Limón, Province of Limón, Costa Rica.

ADDITIONAL TYPE DATA.—Described from the holotype, male and eight male paratypes with data as follows: holotype, locality as given above, USNM type no. 34904, May, Collection William Schaus, genitalia preparation WDF no. 3168; five paratypes, La Florida, Costa Rica, March 1907, 500 ft., Collection William Schaus, genitalia preparations WDF nos. 3171, 3172, 3980, 3981, 3982; two paratypes, Guapiles, Costa Rica, September and May 1907, 850 ft., Collection William Schaus, genitalia preparations WDF nos. 3173, 3979; one paratype, Carillo, Costa Rica, Collection William Schaus, genitalia preparation WDF no. 5012. [Note: Eleven additional males from non-Costa Rican localities (Upper Rio Marañon, Peru, Chapare, Bolivia) are identified as *C. keta* but are not labelled paratypes because of the remoteness of their localities. While the author is satisfied that the two known female specimens upon which the above description of that sex is based are associated correctly, they are excluded also from the type series for the same reason.]

LOCATION OF TYPES.—Holotype and six paratypes in the United States National Museum, one paratype each in the collections of the British Museum (Natural History) and the American Museum of Natural History (New York).

DISTRIBUTION.—In widely separated localities from Costa Rica south to Peru, Bolivia, and Brazil.

COSTA RICA: Province of Limón, Limón (May), La Florida (500 ft., March); Province of San Jose, Carillo (no date), Guapiles (850 ft., May, September). PANAMA: Province of Colón, Porto Bello (April); Rio Trinidad (March). BRITISH GUIANA: Bonaoico (no date). FRENCH GUIANA: Colony of Guiana, St. Laurent (no date). ECUADOR: Department Amazonas, Upper Rio Marañon (October); Department of Loreto, Achinamiza (6001 ft., January). BRAZIL: State of Rio de Janeiro, Rio de Janeiro (no date). BOLIVIA: Department of El Beni, Chapare (no date).

MATERIAL STUDIED.—Twenty males and two females, including their genitalia.

2. *Calystryma atrox* (Butler), new combination

FIGURES 2, 13; PLATES 1 (FIGS. 3, 4), 2 (FIGS. 2, 3), 3 (FIGS. 1, 2)

Tmolus atrox Butler, 1877, Trans. Ent. Soc. London, 1877, p. 140.—Comstock and Huntington, 1959, Journ. New York Ent. Soc., vol. 67, p. 82.

Thecla atrox (Butler).—Druce, 1907, Proc. Zool. Soc. London, 1907, p. 609.—Draudt, *in* Seitz, 1920, Die Gross-Schmetterlinge der Erde, vol. 5, p. 795; 1921, ibid., pp. 824, 826.—Schaus, 1920, Ent. News, vol. 31, p. 176.

Thecla gentilla Schaus.—Schaus [incorrect synonymy] 1920, Ent. News, vol. 31, p. 176.—Draudt [not Schaus] *in* Seitz, 1921, Die Gross-Schmetterlinge der Erde, vol. 5, p. 824.—Comstock and Huntington, [not Schaus] 1960, Journ. New York Ent. Soc., vol. 68, p. 117.

MALE (pl. 1: figs. 3, 4; pl. 3: figs. 1, 2).—Wings above dark brown, lacking white marginal line on hindwing, otherwise as in *C. keta*. Wings underneath with ground color light brown. Hindwing on this surface with red markings darker, with black pupil that centers marginal ocular marking in interspace M_3 in *C. keta*, absent in this species and with black pupil in ocular marking of interspace Cu_1 much larger than in *C. keta*, *C. blora*, or *C. naka*. The red marking inward from this pupil smaller, not extending to postmedian tripartite line. The latter is faintly outlined with red along its inner side only below vein Cu_1, otherwise as in *C. keta*.

Length of forewing 12.5–14 mm.

Male genitalia as illustrated by figures 2B–E with harpes fused only at base; with aedeagus distally curved upward (much more than in *C. keta*) and curved also to the right; with gnathal arm acute and lacking a carina but in ventral view it is sometimes thickened just before distal end; as in the other species of *Calystryma* the shape of

the lateral lobe of the uncus is a most useful distinguishing character; in *C. atrox* the posterior projection is beaklike in shape and arises from near middle of distal margin. Eighth tergite (fig. 2A) incised more shallowly along posterior margin than in *C. keta*, not distinctly enlongated anteriorly and with posterior lobes blunt.

FEMALE (pl. 2: figs. 2, 3).—Forewing above dark brown in the outer one-half of wing, dull metallic purple on the basal one-half. Hindwing entirely dull metallic purple except for indistinct dark brown marginal spots in anal area below vein Cu_1 and a white marginal line extending from anal angle to vein M_3. Orange-red spot on anal lobe faintly indicated. Wings underneath entirely like the male except for a smaller black center in the marginal ocular marking on interspace Cu_1.

Length of forewing 12 mm.

Female genitalia as illustrated by figure 13 with ductus bursae and bursa copulatrix relatively short, their combined lengths being about three and one-half times the width of the superior genital plate; the latter with free edge a long continuous ridge having lateroposterior angles that are projected slightly and bluntly.

TYPE-LOCALITY.—"Pedroso, Rio Purus, State of Amazonas, Brasil."

ADDITIONAL TYPE DATA.—Described by Butler from a single specimen, the holotype, male (Sept. 25, 1876, James W. H. Trail), now in the collection of the British Museum (Natural History) and labeled with type number "Rh. 911" and with male genitalia preparation number "R. 1951 NHB 493." This holotype is illustrated by figures 1 and 2 on plate 3.

LOCATION OF TYPE.—In the British Museum (Natural History).

METHOD OF IDENTIFICATION.—A topotype was not available for comparison with the holotype; however, a specimen from French Guiana was found by D. S. Fletcher that is identical in habitus and genitalia with the type. Through the courtesy of A. G. Gabriel the compared specimen was sent to me for study and, together with the photograph of the type (pl. 3: figs. 1, 2), is the basis for the present identification.

DISTRIBUTION.—In widely separated localities in British Guiana, French Guiana, Brazil, and Peru.

BRITISH GUIANA: Demerara County, Wismar (December). FRENCH GUIANA: Colony of Guiana, St. Laurent (no date). PERU: Department of Loreto, Rio Morona (6003 ft., January). BRAZIL: State of Amazonas, Pedroso, Rio Purus (September).

MATERIAL STUDIED.—Five males and one female, including their genitalia.

3. *Calystryma blora*, new species

FIGURE 3; PLATES 1 (FIGS. 5, 6), 2 (FIGS. 5, 6)

MALE (pl. 1: figs. 5, 6).—Very similar to *C. keta* in maculation, with ground color of wings above dark brown and with white marginal line on hindwing absent or greatly reduced (sometimes indicated by a few scattered white scales). Wings underneath as in *C. keta* with a pale gray ground color and with two marginal ocular markings, one each in interspaces M_3 and Cu_1, the latter being distinctly larger. On the hindwing, on this surface, the orange red is more indistinct on the inner side of the postmedian tripartite line in interspace Cu_1 than in *C. keta*. Other markings quite like those of *C. keta*.

Length of forewing 11.5–12.5 mm.

Male genitalia as illustrated by figures 3B–E with harpes fused only at base; with aedeagus slightly curved upward at distal end about as in *C. keta;* with gnathal arm distally acute and having a carina past the middle near the distal end; with lateral lobe of uncus having a downward directed beaklike posterior projection and with a minimal projection on lower margin. Eighth tergite (fig. 3A) subcordate in shape, shallowly incised along posterior margin, distinctly elongated anteriorly and with posterior lobes blunt. Easily separated from *C. keta* by the shape of the gnathal arm, of the lateral lobe of uncus, and of the eighth tergite.

FEMALE (pl. 2: figs. 5, 6).—Forewing above quite like that of *C. keta*. Hindwing similar to that of *C. keta* with blue more extensive in anal area, the dark brown being restricted to the outer border and anal veins. Red spot on anal lobe present but very faint. Wings underneath very similar to those of the male, differing only in having smaller marginal ocular markings with correspondingly smaller black centers.

Length of forewing 12 mm.

Female genitalia unknown as the abdomen of the sole specimen is missing.

TYPE-LOCALITY.—St. Jean, Maroni River, Colony of Guiana, French Guiana.

ADDITIONAL TYPE DATA.—Described from the holotype male and five male paratypes with data as follows: holotype, locality as given above, USNM type no. 24905, Collection William Schaus, genitalia preparation WDF no. 3166; two paratypes, same locality and collection, genitalia preparations WDF nos. 3167, 3983; one paratype, St. Laurent, French Guiana, Collection E. I. Huntington, American Museum of Natural History; genitalia preparation WDF no. 5006;

two paratypes, Rockstone, Essequibo, British Guiana, genitalia preparations WDF nos. 3175, 3984. [Note: The single female specimen (from Shudihar River, British Guiana) that I associate with the males of this species and upon which the present habitus description was made was not designated the allotype because it lacks its abdomen.]

LOCATION OF TYPES.—Holotype and four paratypes in the United States National Museum. One paratype in the American Museum of Natural History (New York).

DISTRIBUTION.—Known only from French and British Guiana.

FRENCH GUIANA: Colony of Guiana, St. Jean (no date), St. Laurent (no date). BRITISH GUIANA: County?, Shudihar River (January); Essequibo County, Rockstone (no date).

MATERIAL STUDIED.—Six males, including their genitalia.

4. *Calystryma naka*, new species

FIGURES 4, 22; PLATES 1 (FIG. 7), 2 (FIG. 4)

MALE (pl. 1: fig. 7).—Wings above quite like those of *C. atrox* and *C. blora*, dark brown in color and without a white marginal line on hindwing. Wings underneath with ground color pale brown, much lighter in color than in *C. atrox* with markings quite like those of *C. blora* except that there is more orange red on inner side of tripartite postmedian line, especially in interspace Cu_1, this color covering an even larger area on this interspace than it does in *C. keta*.

Length of forewing 12–13 mm.

Male genitalia as illustrated by figures 4B–E with harpes fused only at base; with distal one-half of aedeagus gradually curved upward and thus somewhat similar to that of *C. atrox* but not as in that species curved to the right; with gnathal arms distally acute and bearing a small carina near distal end; with lateral lobe of uncus having a downward directed beaklike posterior projection and with a minimal projection on lower margin and thus similar to *C. blora*, differing from the latter in having the upper angle of this lobe greatly projected. Eighth tergite (fig. 4A) similar to that of *C. keta*, with posterior margin deeply incised and distinctly elongated anteriorly. Differing greatly from that species in having the large posterior lobes evenly rounded.

FEMALE (pl. 2: fig. 4).—Forewing above dark brown except for a large shining blue area covering base of wing below cell to the inner margin. Hindwing covered by this same shining blue except the anal area, the veins on the outer half of wing, and the outer fringe, which are all dark brown. A single tiny brown marginal spot in interspace Cu_1 is all that is present to represent the dark brown border found

in *C. keta* and *C. blora*. Without a white line around outer margin and with anal lobe lacking red spot. Wings underneath like those of the male with smaller black centers to the marginal ocular markings.

Length of forewing 12.5 mm.

Female genitalia as illustrated by figure 22 with ductus bursae and bursa copulatrix relatively short, their combined lengths being just under three and one-half times the width of superior genital plate; the latter with its free edge divided into two lateral elements, each with a large posterior and mesially directed spurlike process and a small anterior and distally directed spurlike process, the latter greatly reduced and toothlike.

TYPE-LOCALITY.—"Upper" Rio Maranon, Department of Amazonas, Peru.

ADDITIONAL TYPE DATA.—Described from the holotype male and allotype female and three male paratypes with data as follows: holotype, locality as given above, 6101 ft., Dec. 30, 1924, H. Bassler Collection, genitalia preparation WDF no. 5003; allotype, same locality, elevation, and collection, Jan. 2, 1925, genitalia preparation WDF no. 5085; one paratype, same locality, elevation, and collection, Dec. 31, 1924, genitalia preparation WDF no. 3156; two paratypes, Rio Santiago, Department of Amazonas, Peru, 6140 ft., Oct. 6, 1924, and Nov. 20, 1924, H. Bassler Collection, genitalia preparations nos. 5001 and 5002.

LOCATION OF TYPES.—Holotypes, allotype, and two paratypes in the American Museum of Natural History (New York). One paratype in the United States National Museum.

DISTRIBUTION.—Known only from the Department of Amazonas in Peru.

MATERIAL STUDIED.—Four males and one female, including their genitalia.

5. *Calystryma meleager* (Druce), new combination

FIGURES 5, 21; PLATES 1 (FIG. 8), 2 (FIG. 7), 3 (FIGS. 3, 4).

Thecla meleager Druce, 1907, Proc. Zool. Soc. London, 1907, p. 618.—Draudt, *in* Seitz, 1920, Die Gross-Schmetterlinge der Erde, vol. 5, p. 800; 1921, ibid., vol. 5, p. 829.—Comstock and Huntington, 1961, Journ. New York Ent. Soc., vol. 69, p. 165.

MALE (pl. 1: fig. 8; pl. 3: figs. 3, 4).—Wings above dark brown covered with dull metallic purple. Wings underneath with ground color gray, darker gray than in *C. keta* and *C. blora* and with similar markings. All red color darker and covering about same area as it does in *C. blora* and with the pupil centering the marginal ocular marking of interspace Cu_1 very large, even larger than it is in *C. atrox*.

Length of forewing 13–15 mm.

Male genitalia as illustrated by figures 5B–E with harpes fused only at base; with aedeagus fairly straight, not curved upward at distal end and thus differing from all the other species of *Calystryma* except *C. trebula* (from which it is easily separated by the shape of the harpes, gnathal arms, and saccus); with gnathal arm distally acute and having a large carina near middle; with lateral lobe of uncus broadly produced below middle and with a minimal projection on lower margin. Eighth tergite (fig. 5A) shallowly incised along posterior margin, subtriangular in shape and with blunt posterior lobes. This structure most similar to that of *C. blora* but more triangular in shape.

FEMALE (pl. 2: fig. 7).—Wings above brown, much lighter in shade than in the species heretofore described. Hindwing with a slightly darker brown marginal spot on interspace Cu_1 and with a thin white marginal line around outer margin from 2d A to vein R_5, this line very faint above vein M_2. Anal lobe with a small pale orange-red spot. Wings underneath similar to those of male with marginal ocular marking of interspace M_3 very faint and with black center of marginal ocular marking of interspace Cu_1 triangular in shape.

Length of forewing 12.5 mm.

Female genitalia as illustrated by figure 21 with ductus bursae and bursa copulatrix relatively short, shorter than in any species of *Calystryma* except *C. tifla* and shorter than in *C. malta* (even though the relative length compared to width of the superior genital plate in *C. malta* is less), their combined lengths being under three and one-half times the width of the superior genital plate; the latter with its free edge divided into two lateral elements, each with the posterior spurlike process found on related species replaced by a broad lobe and each with the anterior spurlike process reduced in size, indicated by short and broadly pointed lobes.

TYPE-LOCALITY.—Dutch Guiana ("Surinam").

ADDITIONAL TYPE DATA.—Originally described by Druce from seven specimens of both sexes. Since no single specimen was stated to be the type in the original description, all seven of these specimens are therefore syntypes (art. 73, pars. *b* and *c* of the "International Code of Zoological Nomenclature" adopted by the XV International Congress of Zoology and published in London in 1961). I hereby designate as the lectotype the one labeled type (with the type no. Rh. 962, genitalia preparation no. R. 1951 NHB 495). This lectotype is illustrated by figures 3 and 4 on plate 3.

LOCATION OF TYPE.—In the British Museum (Natural History).

METHOD OF IDENTIFICATION.—The genitalia of the lectotype were dissected, studied, and compared with the genitalia of one of the other syntypes by D. S. Fletcher of the Department of Entomology, British Museum (Natural History). This syntype was found to be

the same species as the lectotype and, through the courtesy of A. G. Gabriel, it was sent to me for study. The genitalia of this specimen (illustrated in the present paper by figure 5) together with the photograph of the lectotype (herein illustrated by figures 3 and 4 on plate 3) is the basis for the present identification.

DISTRIBUTION.—Known only from two widely spearated areas, Dutch Guiana and Peru.

DUTCH GUIANA: (no specific locality, Fruhsterfer Collection). PERU: Department of Loreto, Iquitos (6036 ft., October). Rio Morona (6203 ft., August).

MATERIAL STUDIED.—Two males and one female, including their genitalia. [Note: The male specimen from Peru is slightly larger and more clearly dull metallic purple, particularly on the forewing, than the one studied from Dutch Guiana. Underneath it has the red markings slightly darker. The eighth tergite and the genitalia of this specimen are somewhat larger. Otherwise it is entirely like the Dutch Guiana specimen.]

6. *Calystryma malta* (Schaus), new combination

FIGURES 6, 16; PLATES 1 (FIG. 9), 2 (FIGS. 8, 9)

Thecla malta Schaus, 1902, Proc. U.S. Nat. Mus., vol. 24, p. 410.—Draudt, *in* Seitz, 1920, Die Gross-Schmetterlinge der Erde, vol. 5, p. 800; 1921, ibid., vol. 5, p. 829, pl. 158, fig. g [8].—Comstock and Huntington, 1961, Journ. New York Ent. Soc., vol. 69, p. 159.

MALE (pl. 1: fig. 9).—Wings above entirely dark brown, not distinguishable from *C. keta* except that the white submarginal line on hindwing below vein M_3 is very faint. Wings underneath light brown in color as in *C. atrox* and *C. maka* and as in the former with only a single red marginal ocular marking on hindwing. It differs from *C. atrox* in having the black pupil in the center of this ocular marking only slightly smaller and in having slightly more red along inner side of postmedian tripartite line on hindwing.

Length of forewing 13 mm.

Male genitalia as illustrated by figures 6B, C with harpe fused only at base, short and bluntly rounded distally with a small nipple-like projection from dorsal margin at distal end, this projection acute and inwardly directed; aedeagus broadly curved upward throughout the distal three-fourths of its length; gnathal arm distally acute and lacking a carina; with lateral lobe of uncus greatly projected posteriorly into a large, blunt, beaklike lobe and with a minimal projection on lower margin. Eighth tergite (fig. 6A) a simple plate, shallowly incised along posterior margin and with anterior and posterior margins nearly parallel.

FEMALE (pl. 2: figs. 8, 9).—Wings above very much like those of *C. meleager*, darker brown in color with a few orange scales on anal lobe of hindwing and with a distinct marginal line extending from vein 2d A to vein M_3 on this wing. Wings below identical to those of the male except with more red along inner side of tripartite postmedian line on hindwing.

Length of forewing 12 mm.

Female genitalia as illustrated in figure 16 with ductus bursae and bursa copulatrix relatively short, their combined lengths about three times the width of the superior genital plate; the latter with its free edge divided into two lateral elements, each without posterior spurlike processes and composed of a broad lobe and with anterior spurlike process reduced in size and sharply pointed, differing in this last respect from *C. meleager*, which otherwise it most closely resembles.

TYPE-LOCALITY.—Peru (no specific locality).

ADDITIONAL TYPE DATA.—Originally described by Schaus from both sexes with no statement as to the number of specimens. There are in the original series in the United States National Museum four specimens, two males and two females. The first specimen, a male, bears a holograph ink name label with the word "type" in the lower left-hand corner. It also bears the usual USNM red type label with the type number 5929 and a label with the genitalia preparation number WDF 2706. The second specimen, a male without abdomen, bears a holograph ink name label without the word "type" and the USNM red type label with the same type number. The third specimen, a female, bears a holograph ink name label without the word type and lacks a red type number label. This specimen bears a label with the genitalia preparation number WDF 5017. The fourth specimen, a female, bears a holograph ink name label without the word "type" and the same USNM red type label as the first and second specimens mentioned above. It bears also a label with the genitalia preparation number, WDF 5016. It is clear that the first specimen mentioned above, the only one bearing the word "type" on its holograph label is the specimen regarded by Schaus as the type and I therefore designate it the lectotype and have so labeled it. The third specimen mentioned above, a female conspecific with the lectotype, I designate the paralectotype and have so labeled it. The second Schaus specimen mentioned is actually a male of *Calystryma barza*, new species, described later in this paper. The fourth specimen mentioned is a female of an unidentified species not belonging to the genus *Calystryma*.

LOCATION OF TYPE.—As stated above, lectotype male and paralectotype female in the United States National Museum.

DISTRIBUTION.—Known only from Peru, the rather ambiguous type-locality.

MATERIAL STUDIED.—One male and one female including their genitalia. No other specimens are known.

7. *Calystryma anapa*, new species

FIGURES 7, 15; PLATES 1 (FIG. 10), 2 (FIG. 10).

MALE (pl. 1: fig. 10).—Wings above about as in *C. meleager* with the dull metallic purple somewhat darker in hue. Wings underneath with ground color light brown, slightly darker than in *C. malta* and, as in that species, with only a single red marginal ocular marking on the hindwing. It differs from *C. malta* in having the black pupil in the center of this ocular marking very large, taking up over one-half of the area in interspace Cu_1 between the margin and postmedian tripartite line, in having red along inner side of this line more evident, and in having the marginal white line extending further toward costa. The lines at the ends of the cells in both forewing and hindwing are more distinct than in any other species of *Calystryma*.

Length of forewing 15.5 mm.

Male genitalia as illustrated by figures 7B–E with harpe fused only at base, short and bluntly rounded distally with a small nipple-like projection from dorsal margin at distal end, this projection blunt and not inwardly directed; aedeagus broadly curved upward throughout the distal three-fourths of its length, quite similar to *C. malta;* with gnathal arm distally acute and lacking a carina; with lateral lobe of uncus greatly projected posteriorly into a large, blunt, beaklike lobe and with a minimal projection of lower margin. Eighth tergite (fig. 7A) shallowly incised along posterior margin with large blunt posterior lobes and thus more similar to *C. blora* than to *C. malta*. *Calystryma anapa* is distinguished easily from the latter, its nearest relative, in the shapes of the harpe and of the eighth tergite.

FEMALE (pl. 2: fig. 10).—Wings above not different from those of *C. malta*. Wings underneath with slightly lighter brown ground color. Maculation very similar to the male with a smaller black center to the marginal ocular marking of interspace Cu_1.

Length of forewing 13 mm.

Female genitalia as illustrated by figure 15 with ductus bursae and bursa copulatrix relatively short, their combined lengths about three and one-half times the width of the superior genital plate, the latter with its free edge divided into two lateral elements, each with distinct anterior and posterior spurlike processes that are directed distally.

TYPE-LOCALITY.—Teffé, State of Amazonas, Brazil.

ADDITIONAL TYPE DATA.—Described from the holotype male and allotype female with data as follows: holotype, locality as given above, USNM type no. 24907, no date, Collection Brooklyn Museum, genitalia preparation WDF no. 3178; allotype, "Middle" Rio Ucayali, Department of Loreto, Peru, 6167 ft., Aug. 24, 1928, H. Bassler Collection, genitalia preparation WDF no. 5089.

LOCATION OF TYPES.—Holotype in the United States National Museum. Allotype in the American Museum of Natural History (New York).

DISTRIBUTION.—Known only from the holotype and allotype, which, as mentioned above, are from separate localities in Brazil and Peru.

MATERIAL STUDIED.—One male, one female, including their genitalia.

8. *Calystryma gentilla* (Schaus), new combination, new status

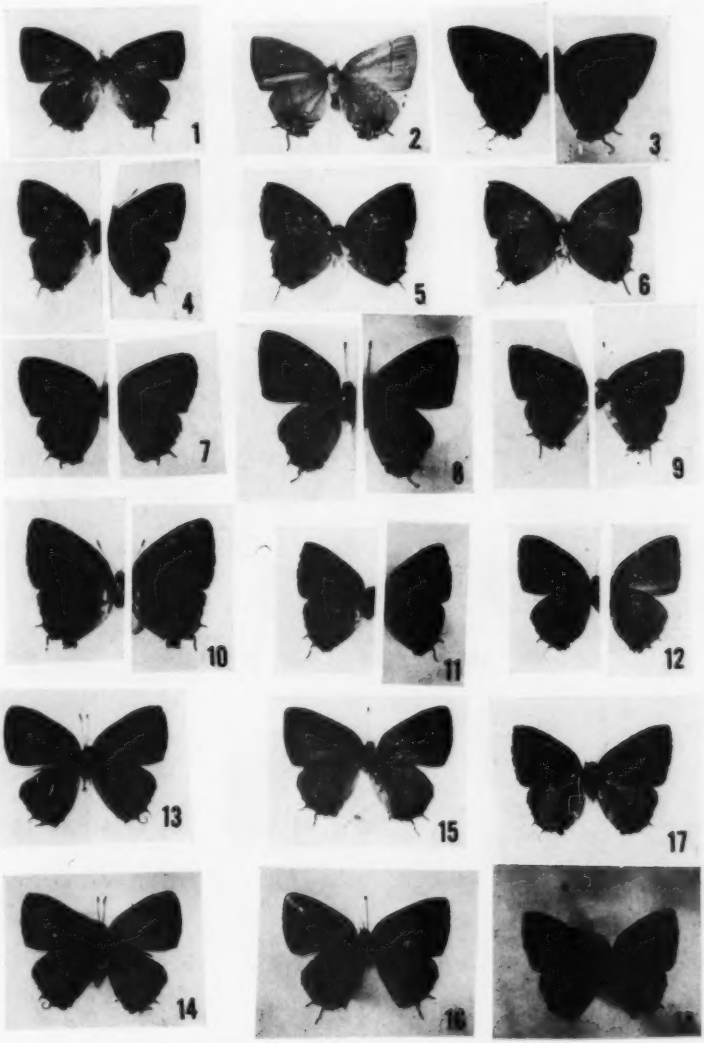
FIGURES 8, 17; PLATES 1 (FIG. 11), 2 (FIGS. 11, 12)

Thecla gentilla Schaus, 1902, Proc. U.S. Nat. Mus., vol. 24. p. 420.—Draudt, *in* Seitz, 1920, Die Gross-Schmetterlinge der Erde, vol. 5, p. 801; 1921, ibid., vol. 5, p. 828. [For Schaus, 1920, Draudt, 1921, and Comstock and Huntington, 1960, references to *Thecla gentilla* (misidentified), see under *Calystryma atrox*.]

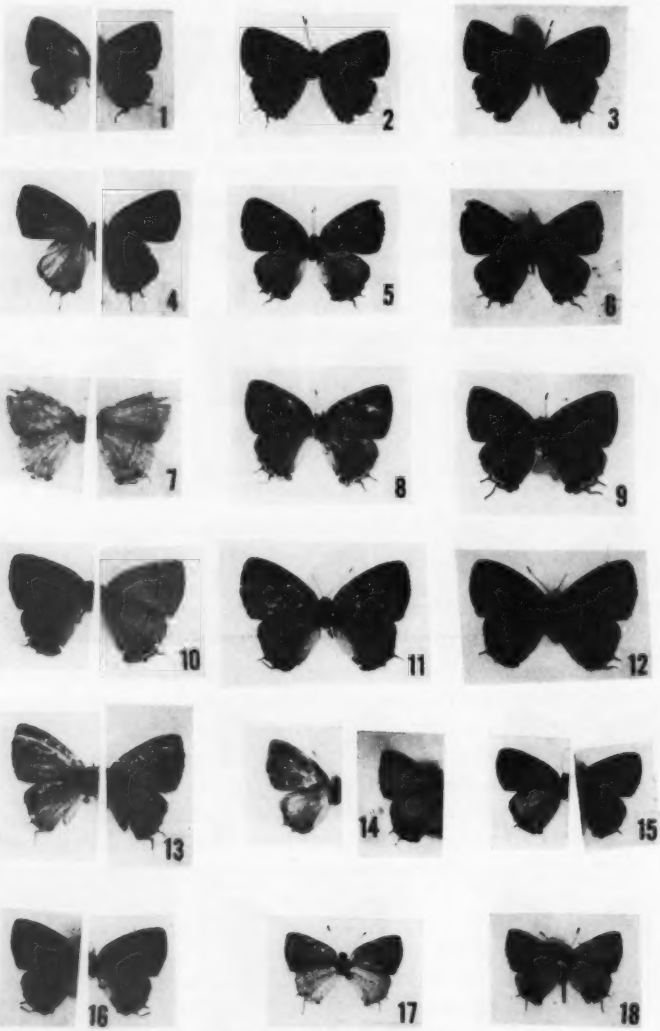
MALE (pl. 1: fig. 11).—Wings above with dull metallic purple ground color, not distinguishable from *C. anapa*. Wings underneath dark brownish gray and as in the latter species with a small red, marginal ocular marking in interspace Cu_1; this spot very small, not large as in *C. anapa* and, as in that species, without such a marking in interspace M_3. Red lunule found inward from marginal bluish spot in interspace Cu_2 small and peppered with black. Red absent along inner side of tripartite postmedian line and with marginal white line very faint above vein Cu_1.

Length of forewing 12—14 mm.

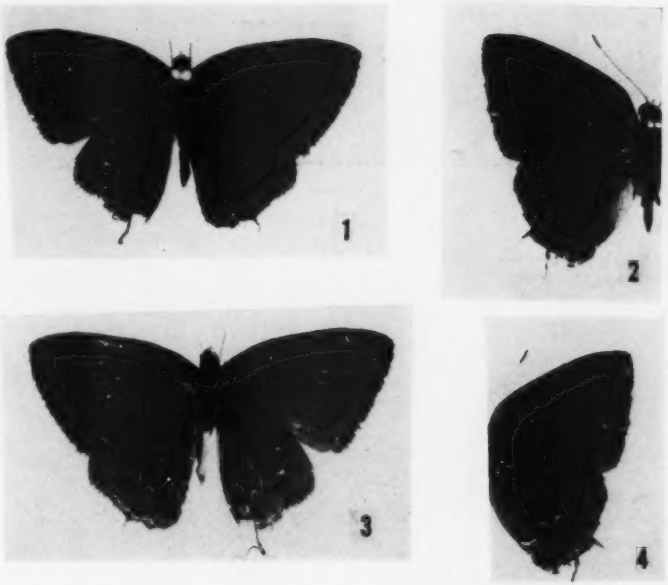
Male genitalia as illustrated by figures 8B–E with harpes fused only at base; with aedeagus straight except the extreme distal end which is upcurved slightly and thus somewhat similar to that of *C. blora;* gnathal arm distally acute and having a large carina from middle about as in *C. blora* and *C. meleager;* lateral lobe of uncus projected into a small blunt lobe along posterior margin near middle; this lobe not beaklike. Eighth tergite (fig. 8A) cordate in shape, incised along posterior margin, this incision very deep and narrow, distinctly and greatly elongated anteriorly, with posterior lobes blunt and very large and rounded. This tergite thus differs greatly in shape from those of *C. anapa*, *C. naka*, and the other species described above.



FIGURES 1–18.—Males (natural size; spliced figures = upper surface on left, undersurface on right): 1, *Calystryma keta* Field, upper surface, holotype; 2, undersurface of 1; 3, *C. atrox* (Butler), Rio Marona, Peru; 4, same species, St. Jean, Maroni, French Guiana; 5, *C. blora* Field, upper surface, holotype; 6, undersurface of 5; 7, *C. naka* Field, holotype; 8, *C. meleager* (Druce), Iquitos, Peru; 9, *C. malta* (Schaus), lectotype; 10, *C. anapa* Field, holotype; 11, *C. gentilla* (Schaus), holotype; 12, *C. pisis* (Godman and Salvin), Alhajuela, Panama; 13, *C. barza* Field, holotype; 14, undersurface of 13; 15, *C. tifla* Field, holotype; 16, undersurface of 15; 17, *C. trebula* (Hewitson), Porto Bello, Panama; 18, undersurface of 17.



FIGURES 1–18.—Females (natural size; spliced figures = upper surface on left, undersurface on right, reversed in fig. 16): 1, *Calystryma keta* Field, "Upper" Rio Maranon, Peru; 2, *C. atrox* (Butler), upper surface, Wismar, British Guiana; 3, undersurface of 2; 4, *C. naka* Field, allotype; 5, *C. blora* Field, upper surface, Shudihar River, British Guiana; 6, undersurface of 5; 7, *C. meleager* (Druce), Rio Morona, Peru; 8, *C. malta* (Schàus), upper surface, paralectotype; 9, undersurface of 8; 10, *C. anapa* Field, allotype; 11, *C. gentilla* (Schaus), upper surface, Igarapi-Açu, Brazil; 12, undersurface of 11; 13, *C. pisis* (Godman and Salvin), Rio Trinidad, Panama; 14, *C. trebula* (Hewitson), La Florida, Costa Rica; 15, *C. tifla* Field, allotype; 16, same, paratype; 17, *C. cinniana* (Hewitson), upper surface, Port of Spain, Trinidad; 18, undersurface of 17.



FIGURES 1–4.—Males (twice natural size): 1, *Calystryma atrox* (Butler), upper surface, holotype; 2, undersurface of 1; 3, *C. meleager* (Druce), upper surface, lectotype; 4, undersurface of 3.

FEMALE (pl. 2: figs. 11, 12).—Wings above similar to *C. anapa* and *C. malta*, differing in lacking orange on anal lobe and in having the marginal white line very indistinct. Wings underneath slightly lighter in ground color than in the male with black center of marginal ocular marking on interspace Cu_1 smaller than in the male and with an ocular marking faintly indicated on interspace M_3.

Length of forewing 13 mm.

Female genitalia as illustrated by figure 17 with ductus bursae and bursa copulatrix relatively short, their combined lengths about three and one-half times the width of the superior genital plate; the latter with its free edge divided into two lateral elements with large distally directed posterior spurlike processes, the largest found in the genus, and with smaller but relatively large anterior spurlike processes, which also are directed distally.

TYPE-LOCALITY.—"Petropolis," State of Rio de Janeiro, Brazil.

ADDITIONAL TYPE DATA.—Originally described by Schaus without a statement as to the number of specimens. Since only one specimen in the Schaus Collection of the United States National Museum bears a holograph name label and a red USNM type label with the number 5951, this is the holotype. This specimen also bears a label with the genitalia preparation number WDF 3987. There is a second specimen, a male, in the Schaus Collection with the same locality label as the holotype. I do not consider it a paratype as there is no evidence that Schaus had associated it with the holotype.

LOCATION OF TYPE.—Holotype in the United States National Museum.

DISTRIBUTION.—Known only from the states of Rio de Janeiro and Pará in Brazil.

BRAZIL: State of Rio de Janeiro, Petropolis (no date); State of Pará, Igarape-Açu (December–February).

MATERIAL STUDIED.—Five males and two females, including their genitalia.

9. *Calystryma pisis* (Godman and Salvin), new combination

FIGURES 9, 23; PLATES 1 (FIG. 12), 2 (FIG. 13)

Thecla pisis Godman and Salvin, 1887, Biologia Centrali-Americana: Zoology: Insecta: Lepidoptera-Rhopalocera, vol. 2, p. 84; 1888, ibid., vol. 3, pl. 57, figs. 24, 25 [male].—Draudt, *in* Seitz, 1920, Die Gross-Schmetterlinge der Erde, vol. 5, p. 800; 1921, ibid., p. 830, pl. 158, figs. h [1], h [2].—Comstock and Huntington, 1962, Journ. New York Ent. Soc., vol. 70, p. 115.

MALE (pl. 1: fig. 12).—Wings above dull metallic purple as in *C. anapa* and *C. gentilla*. Wings underneath pale brownish gray with a faint shining yellowish reflection, otherwise with maculation about

as in *C. keta*, with red ocular markings present in both interspace M_3 and Cu_1 on hindwing and with red present along tripartite postmedian line almost to costa.

Length of forewing 13–14.5 mm.

Male genitalia as illustrated by figures 9B–E with harpes fused only at base; with aedeagus nearly straight, except distal end, which is upcurved distinctly, more so than in *C. gentilla;* differing from all other species of *Calystryma* in the shape of the gnathal arm, which is elongated distally, almost needle-like, with carina large, greatly enlarging base of gnathal arm toward its elbow; lateral lobe of uncus similar to that of *C. gentilla* with its posterior lobe broader. Eighth tergite (fig. 9A) cordate in shape, deeply incised along posterior margin with this incision broad and troughlike and thus quite easily distinguished from *C. gentilla*, posterior lobes large, blunt, and concave, not rounded, differing from those of *C. barza*, especially in the greater undulation before distal end of lateral margin, causing the lateral angle to be more pronounced and rounded.

FEMALE.—(pl. 2: fig. 13).—Forewing above dark brown with a slight bluish cast in the basal portion. Hindwing dark brown on costal margin above cell and vein R_s, in extreme base of cell and beyond cell in interspaces M_1 and M_2. Shining blue in outer portion of cell and between veins M_3 and 2d A. With a white marginal line extending from vein 2d A to M_3 and with marginal dark brown spots in interspaces M_3 and Cu_1. Anal lobe entirely dark brown. Wings underneath not distinguishable from those of the male.

Length of forewing 13.5 mm.

Female genitalia as illustrated by figure 23 with ductus bursae and bursa copulatrix relatively short, their combined lengths being about three and one-half times the width of the superior genital plate; the latter with its free edge divided into two lateral elements that are each large, rounded, lobelike ridges lacking spurlike processes or any sharp angles.

TYPE-LOCALITY.—Bugaba, Province of Chiriquí, Panama.

ADDITIONAL TYPE DATA.—This species was described by Godman and Salvin from an unspecified number of males from Teleman, Guatemala, Chontales, Nicaragua, and Bugaba, Panama. The Bugaba specimen (collected by Champion) and now in the collection of the British Museum (Natural History), upon which the original colored illustration was based is here designated the lectotype.

METHOD OF IDENTIFICATION.—A topotype matching in every way the maculation of the original colored figure and compared by William Schaus with the original series in the British Museum is the basis for the present identification (fig. 9) of *C. pisis*.

DISTRIBUTION.—From Guatemala south into Panama.

GUATEMALA: Department of Izabal, Cayuga (June, August, September). COSTA RICA: Province of Limón, La Florida (500 ft., March). PANAMA: Province of Chiriquí, Bugaba (no date); Province of Colón, Porto Bello (April), Rio Trinidad (March); Canal Zone, Barro Colorado Island (March), Alhajuela (April).

MATERIAL STUDIED.—Nine males and one female, including their genitalia.

10. *Calystryma barza*, new species

FIGURE 10; PLATE 1 (FIGS. 13, 14)

MALE (pl. 1: figs. 13, 14).—Wings above dark brown as in *C. keta*, *C. atrox*, *C. blora*, and *C. naka*. Wings underneath with ground color pale brown, maculation very much like that of *C. naka* with a great deal of orange red along inner side of tripartite postmedian line, especially in interspace Cu_1, with slightly smaller black pupils in center of marginal ocular markings of interspace M_3 and Cu_2 and with the marginal blue spot in interspace Cu_2 greatly reduced because of the extension of orange red from the interspaces on either side.

Length of forewing 12.5–13 mm.

Male genitalia as illustrated by figures 10B–E with harpes fused only at base and in lateral view with distal two-thirds of ventral margin very convex and thus differing from all other species of *Calystryma;* with aedeagus nearly straight and distally greatly curved to the insect's left; with gnathal arm acute and upturned at distal end and with carina before middle and small; lateral lobe of uncus slightly and bluntly produced at lower angle with lower margin slightly undulate. Eighth tergite (fig. 10A) similar to that of *C. pisis* with anterior projection broader and indented and with troughlike incision of posterior margin much broader inwardly than at free margin, the posterior lobes thus formed slightly concave along free margin.

FEMALE.—Unknown.

TYPE-LOCALITY.—"Upper" Rio Marañon, Department of Amazonas, Peru.

ADDITIONAL TYPE DATA.—Described from the holotype male and two male paratypes with data as follows: holotype, locality as given above, 6101 ft., Jan. 1, 1925, H. Bassler Collection, genitalia preparation WDF no. 5004; one paratype, Rio Santiago, Department of Amazonas, Peru, 6012 ft., Nov. 30, 1924, H. Bassler Collection, genitalia preparation WDF no. 3157; and one paratype, Collection William Schaus, the paratype of *C. malta* (having its abdomen missing) that is mentioned under the discussion of that species.

LOCATION OF TYPES.—Holotype and one paratype in the American Museum of Natural History (New York), one paratype in the United States National Museum.

DISTRIBUTION.—Known only from Peru.

MATERIAL STUDIED.—Two males, including their genitalia.

11. *Calystryma trebula* (Hewitson), new combination

FIGURES 11, 18; PLATES 1 (FIGS. 17, 18), 2 (FIG. 14)

Thecla trebula Hewitson, 1868, Descriptions of some new species of Lycaenidae, p. 16; 1873, Illustrations of diurnal Lepidoptera, Lycaenidae, vol. 1, p. 146; 1873, ibid., vol. 2, pl. 57, figs. 363, 364.—Godman and Salvin, 1887, Biologia Centrali-Americana: Lepidoptera-Rhopalocera, vol. 2, pp. 84, 85.—Godman, *in* Godman and Salvin, 1901, Biologia Centrali-Americana: Lepidoptera-Rhopalocera, vol. 2, p. 720.—Dyar, 1914, Proc. U.S. Nat. Mus. vol. 47, p. 149.—Draudt, *in* Seitz, 1920, De Gross-Schmetterlinge der Erde, vol. 5, p. 801; 1921, ibid., p. 831, pl. 158, figs. h [8] h [9].—Hoffmann, 1940, An. Inst. Biol., vol. 11, p. 717.—Comstock and Huntington, 1964, Journ. New York Ent. Soc., vol. 72, p. 176.

MALE (pl. 1: figs. 17, 18).—Forewing above very dark brown, hindwing bright iridescent blue except for a border of dark brown around outer margin that is just over one millimeter in width. It thus differs from all other species of *Calystryma*. Wings underneath bright yellowish brown, thus also differing from all other species of *Calystryma* on this surface. Maculation most similar to that of *C. blora* except that red coloration on hindwing is more distinctly red and the elements of the white marginal line on this wing are convex instead of being more straight, outlining the outer edge of blue spot in interspace Cu_2 and the black pupillated red ocular markings in interspaces M_3 and Cu_1.

Length of forewing 11.5–13 mm.

Male genitalia as illustrated by figures 11B–E with harpes fused only at base; with aedeagus slightly upcurved from near middle, otherwise straight; with gnathal arm blunt and slightly upturned at distal end and with carina small and arising from near distal end causing gnathal arm to be nearly bifurcate in appearance and thus differing from all other species of *Calystryma*; lateral lobe of uncus much less produced than in the other species and with lower margin slightly concave. Eighth tergite (fig. 11A) similar to that of *C. pisis* and *C. barza* with anterior projection narrow and rounded, not indented, with troughlike incision of posterior margin only slightly broader anteriorly than at free margin and with posterior lobes slightly rounded, not concave along free margin.

FEMALE (pl. 2: fig. 14).—Forewing dark brown except for a few blue scales below vein 2d A in basal one-half of wing. Hindwing bright shining blue except for a dark brown border, about one millimeter in width around outer margin, this border broken into separate but nearly confluent dark brown spots in interspaces M_3, Cu_1, and Cu_2. Marginal white line present in these same interspaces. Anal lobe lacking red. Wings underneath similar in all respects to those of the male except with the marginal ocular markings slightly smaller on the hindwing.

Length of forewing 11–12 mm.

Female genitalia as illustrated by figure 18 with ductus bursae and bursa copulatrix relatively short, their combined lengths just over three and one-half times the width of superior genital plate; the latter with its free edge divided into two lateral elements, each with two strongly developed spurlike processes, about equal in size and distally directed.

TYPE-LOCALITY.—Teffé ("Ega"), State of Amazonas, Brazil.

ADDITIONAL TYPE DATA AND LOCATION OF TYPE.—This species was described by Hewitson from a single specimen, the holotype male (in the collection of H.W. Bates), now in the collection of the British Museum (Natural History) and labeled with the type number Rh. 955.

METHOD OF IDENTIFICATION.—The original description, the original colored illustrations, and a specimen compared by William Schaus with the holotype are the basis for the present identification of the name *C. trebula*.

DISTRIBUTION.—Widely spread over the American tropics from Mexico south to Brazil and Peru.

MEXICO: State of Vera Cruz, San Rosa (April). GUATEMALA: Department of Izabal, Cayuga (May). COSTA RICA: Province of San José, Guapiles (850 ft., May); Province of Limón, La Florida (500 ft., March). PANAMA: Province of Chiriquí, Chiriquí (no date); Province of Bocas del Toro, Bocas del Toro (April); Province of Colón, Porto Bello (April), Rio Trinidad (March); Canal Zone, Barro Colorado Island (March). COLOMBIA: Department of Cauca, Jalima (no date). PERU: Department of Loreto, Achinamiza (6001 ft., September). BRAZIL: State of Amazonas, Teffé (no date).

MATERIAL STUDIED.—Twenty-seven males and two females, including their genitalia.

12. *Calystryma tifla*, new species

FIGURES 12, 19; PLATES 1 (FIGS. 15, 16), 2 (FIGS. 15, 16)

MALE (pl. 1: figs. 15, 16).—Wings above entirely dark brown as in *C. barza*, *C. keta*, and the other brown-colored species of *Calystryma*. Wings underneath with ground color pale brown, paler than in *C. naka*, about as in *C. barza* and with maculation differing from the latter only in having the marginal blue spot of interspace Cu_2 on hindwing larger and the white marginal line on this wing more distinct.

Length of forewing 13 mm.

Male genitalia as illustrated by figures 12B–E with harpes fused only at base and unique in shape both in lateral and in ventral views, being bifurcate in ventral view and showing a large spurlike projection from dorsal margin near distal end in lateral view; with aedeagus extremely long and distinctly upcurved distally; with gnathal arms acute and broadly and evenly bent upward, without carina; with

lateral lobe of uncus having a greatly projected beaklike lobe on posterior margin and with lower margin convex. Eighth tergite (fig. 12A) similar to that of *C. trebula* and with anterior projection narrow and extended, with incision of posterior margin shallow and broad forming posterior lobes that are slightly acute laterally along free margin.

FEMALE (pl. 2: figs. 15, 16).—Forewing dark brown except for two rays of shining blue, one in base of wing below 2d A and the other along base of cell. Hindwing mostly shining blue in color, very much as in females of *C. trebula* with dark border becoming more narrow toward costa instead of broader as is true in that species and also as in *C. trebula* with this border broken into separate but nearly confluent dark brown spots in interspaces M_3, Cu_1, and Cu_2. There are a few red scales on anal lobe and there is a bluish-white marginal line below vein M_3 extending to vein 2d A. Wings underneath identical to those of the male.

Length of forewing 10.5–12 mm.

Female genitalia as illustrated by figure 19 with ductus bursae and bursa copulatrix relatively short, their combined lengths only about three times the width of the superior genital plate; the latter with its free edge divided into two lateral elements each with both posterior and anterior spurlike processes that are reduced and about equal in size and with the anterior spurlike process sharply pointed and the posterior one blunt.

TYPE-LOCALITY.—Achinamiza, Department of Loreto, Peru.

ADDITIONAL TYPE DATA.—Described from the holotype male, allotype female, and one female paratype with data as follows: holotype, locality as given above, 6001 ft., Oct. 30, 1927, H. Bassler Collection, genitalia preparation WDF no. 5005; allotype, same data as holotype except genitalia preparation WDF no. 5081, paratype, same data except collecting date in Jan. 3, 1936, and genitalia preparation WDF no. 5084.

LOCATION OF TYPES.—Holotype and allotype in the American Museum of Natural History (New York), paratype in the United States National Museum.

DISTRIBUTION.—Known only from the type-locality in Peru.

MATERIAL STUDIED.—One male and two females, including their genitalia.

13. *Calystryma cinniana* (Hewitson), new combination

FIGURE 20; PLATE 2 (FIGS. 17, 18)

Thecla cinniana Hewitson, 1877, Illustrations of diurnal Lepidoptera, Lycaenidae, vol. 1, p. 189; vol. 2, pl. 75, figs. 593, 594 [female].—Druce, 1907, Proc. Zool. Soc. London, 1907, p. 622.—Draudt, *in* Seitz, 1920, Die Gross-Schmetterlinge der Erde, vol. 5, p. 805; 1921, ibid., p. 827; 1922, ibid., pl.

159, figs. f [3], f [4].—Comstock and Huntington, 1959, Journ. New York Ent. Soc., vol. 67, p. 187.

Calycopis cinniana (Hewitson).—Kaye, 1914, Trans. Ent. Soc., London, 1913, p. 570; 1921, Catalogue of Trinidad Lepidoptera: Rhopalocera, Mem. Dept. Agric., Trinidad and Tabago, no. 2, p. 94.

MALE.—The male is said by Druce (Proc. Zool. Soc. London, 1907, p. 622) to differ from the female in having the costal half of the uppersurface of the hindwing dark brown. I have been unable to find males I could associate with the two females identified as *C. cinniana* below.

FEMALE (pl. 2: figs. 17, 18).—Forewing entirely dark brown except for a few blue scales on base of vein 2d A. Hindwing shining pale blue, much paler in hue than in the other species of the genus and with this color covering a larger area than in the other species so that this wing is almost entirely pale blue except for dark brown on anal lobe and for a tiny and faint marginal dark brown spot on interspace Cu_1 and a faint bluish-white marginal line between 2d A and vein M_1. Fringe at margin dark brown, outward from margin bluish white. Wings below pale brown, paler than in other species of the genus except *C. tifla* and much warmer in hue than in that species.

Length of forewing 10 mm. The smallest species in the genus.

Female genitalia as illustrated by figure 20 with ductus bursae and bursa copulatrix very short, the shortest of any species of *Calystryma*, the combined length being only about two and one-half times the width of the superior genital plate; the latter with its free edge divided into two lateral elements, with posterior spurlike processes lacking and anterior spurlike process greatly reduced and with the posterior margin between these spurlike processes greatly produced posteriorly (and thus differing from all other species of *Calystryma*).

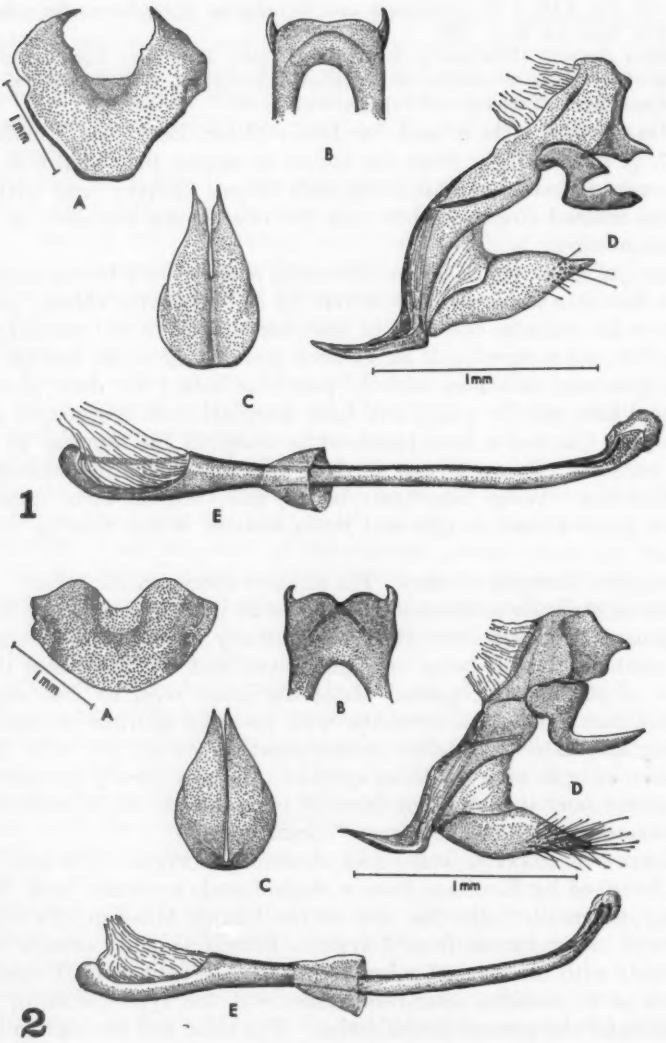
TYPE-LOCALITY.—"The Amazon," Brazil.

METHOD OF IDENTIFICATION AND LOCATION OF TYPE.—This species was described by Hewitson from a single female specimen from the Henley G. Smith Collection now in the British Museum (Natural History). A specimen from Cayenne, French Guiana, comparing favorably with the original colored illustration identified by William Schaus as *C. cinniana* after comparison with the type specimen, is the basis for the present identification. The color and maculation of both surfaces of the hindwings cannot be confused with any other species.

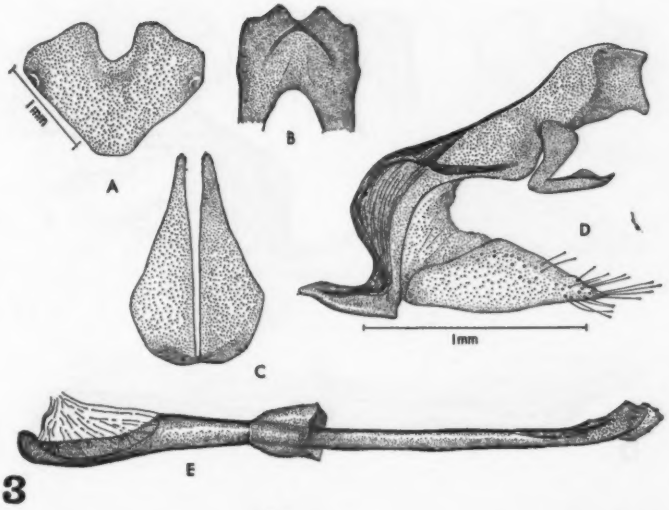
DISTRIBUTION.—From Trinidad and French Guiana to the Amazon River in Brazil.

TRINIDAD: St. George County, Port of Spain (April). FRENCH GUIANA: Colony of Guiana, Cayenne (no date). BRAZIL: state?, the Amazon (no date).

MATERIAL STUDIED.—Two females, including their genitalia.



FIGURES 1, 2.—Male genitalia and 8th tergite of male abdomen: 1, *Calystryma keta* Field, holotype; 2, *C. atrox* (Butler), from prep. 3160 WDF. (A=8th tergite; B=uncus and gnathos in dorsal view; C=harpes in ventral view; D=left half of harpe, tegumen, uncus, vinculum, and saccus in lateral view; E=aedeagus in lateral view.)



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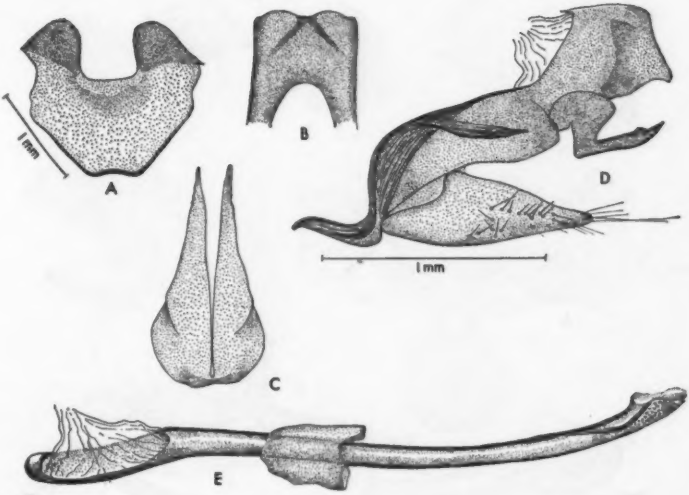

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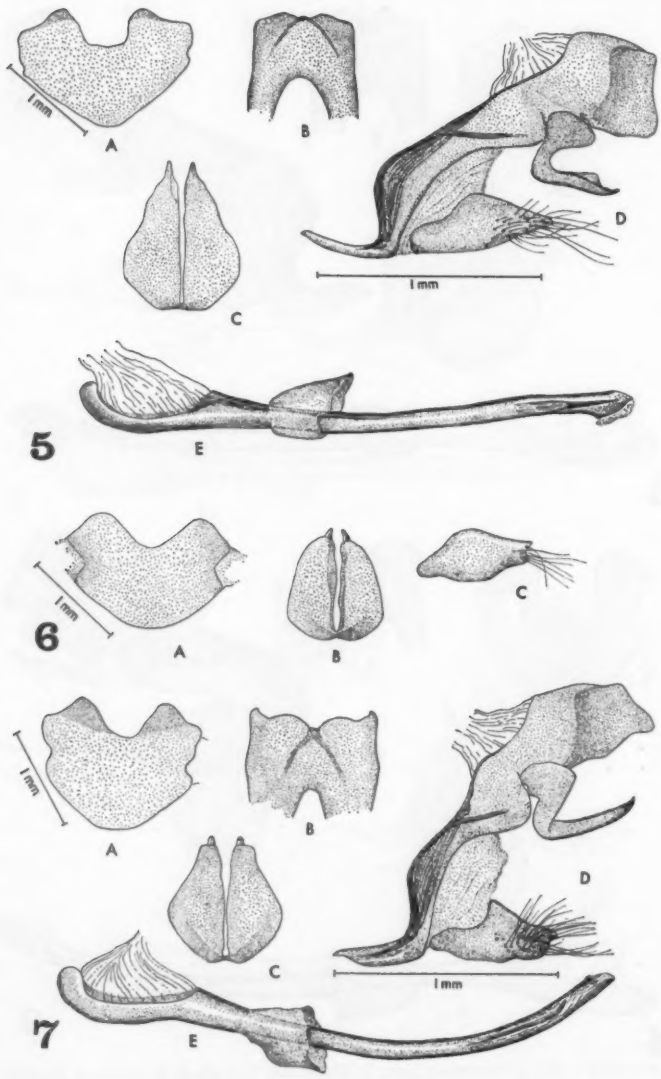
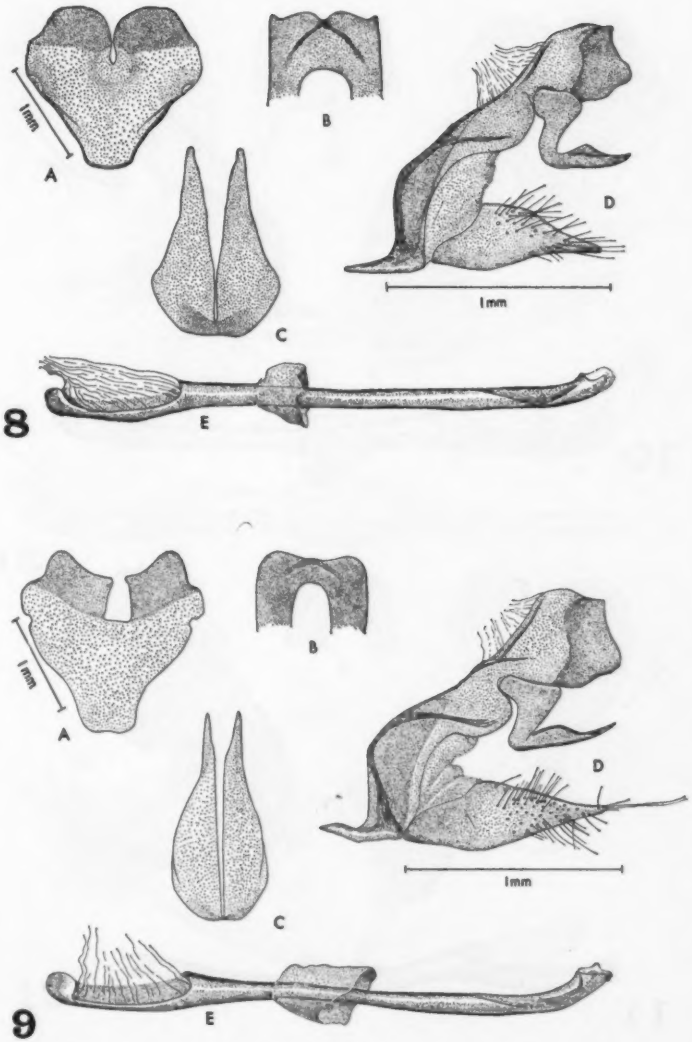
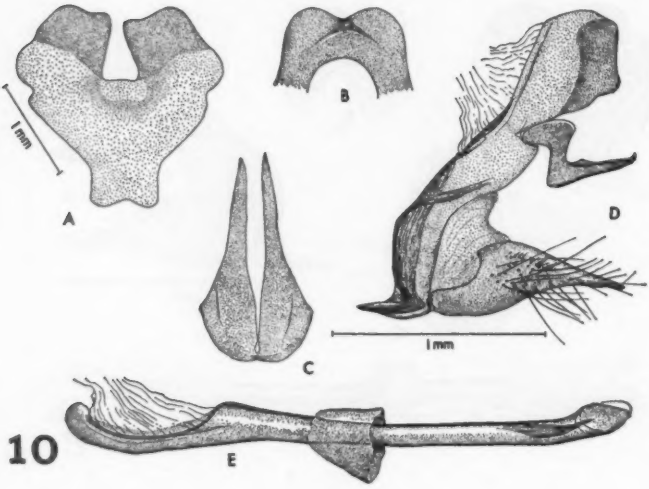
FIGURES 3, 4.—Male genitalia and 8th tergite of male abdomen: 3, *C. blora* Field, holotype; 4, *C. naka* Field, holotype. (Same key as figs. 1, 2.)



FIGURES 5–7.—Male genitalia and 8th tergite of male abdomen: 5, *C. meleager* (Druce), from prep. BM 1951 498; 7, *C. anapa* Field, holotype (same key as figs. 1, 2). Parts of male genitalia and 8th tergite of male abdomen: 6, *C. malta* (Schaus), lectotype (A=8th tergite; B=harpes in ventral view; C=left harpe in lateral view).



FIGURES 8, 9.—Male genitalia and 8th tergite of male abdomen: 8, *C. gentilla* (Schaus), holotype; 9, *C. pisis* (Godman and Salvin), from prep. 5035 WDF. (Same key as figs. 1, 2.)



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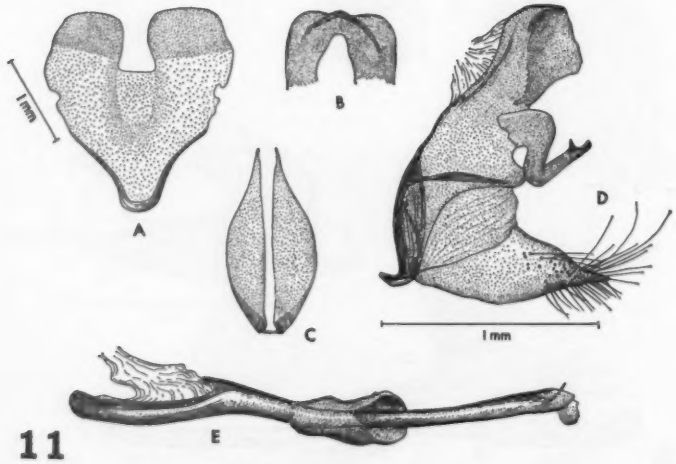

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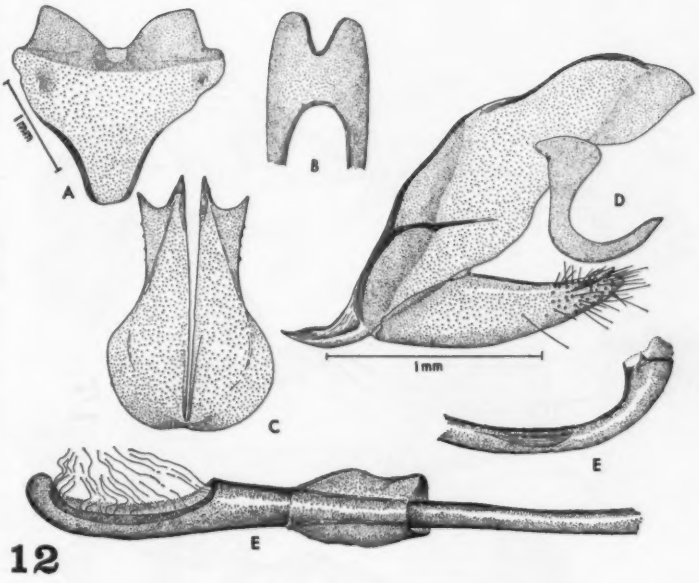
FIGURES 10, 11.—Male genitalia and 8th tergite of male abdomen: 10, *C. barza* Field, ♂ holotype; 11, *C. trebula* (Hewitson), from prep. 5039 WDF. (Same key as figs. 1, 2.)



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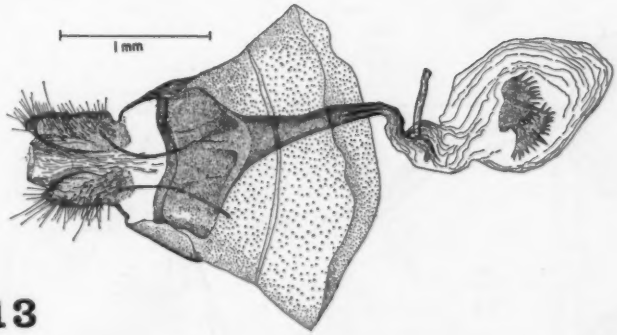

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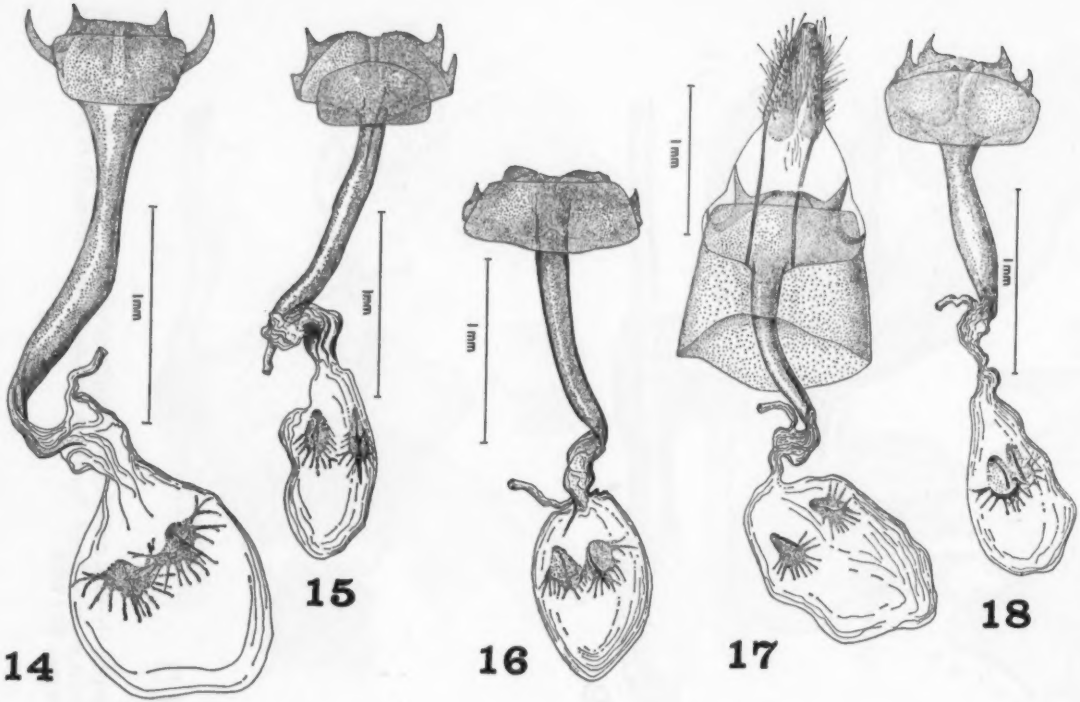
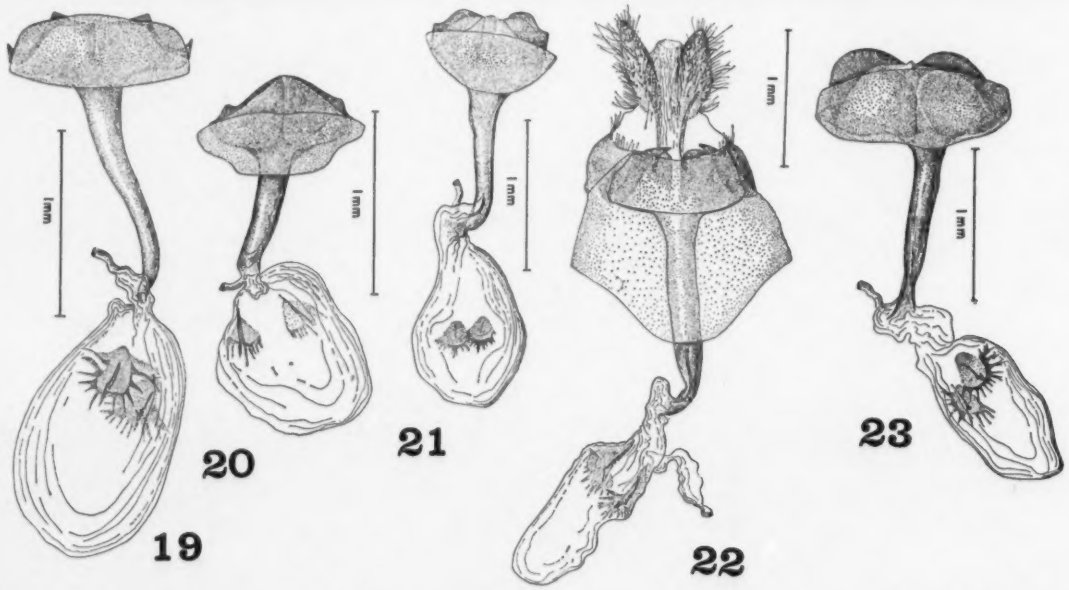
FIGURES 12, 13.—Male genitalia and 8th tergite of male abdomen: 12, *C. tifla* Field, holotype (same key as figs. 1, 2). Female genitalia in ventral view: 13, *C. atrox* (Butler), from prep. 5072 WDF.



FIGURES 14–18.—Female genitalia in ventral view (ovipositor shown only in fig. 17): 14, *C. keta* Field, from prep. 5086 WDF; 15, *C. anapa* Field, allotype; 16, *C. malta* (Schaus), paralectotype; 17, *C. gentilla* (Schaus), from prep. 5088 WDF; 18, *C. trebula* (Hewitson), from prep. 5047 WDF.

FIGURES 14–18.—Female genitalia in ventral view (ovipositor shown only in fig. 17): 14, *C. keta* Field, from prep. 5086 WDF; 15, *C. anapa* Field, allotype; 16, *C. malta* (Schaus), paralectotype; 17, *C. gentilla* (Schaus), from prep. 5088 WDF; 18, *C. trebula* (Hewitson), from prep. 5047 WDF.



FIGURES 19–23.—Female genitalia in ventral view (ovipositor shown only in fig. 22): 19, *C. tifla* Field, allotype; 20, *C. cinniana* (Hewitson), from prep. 5082 WDF; 21, *C. meleager* (Druce), from prep. 5090 WDF; 22, *C. naka* Field, allotype; 23, *C. pisis* (Godman and Salvin), from prep. 5046 WDF.

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